

[What Is Claimed Is:]

1. A pipe joint device, comprising:

flanges mounted to ends of pipes to be coupled together or ends of both a pipe and a pipe joint to be coupled together, the flange having at least one ring groove
5 around an outer circumferential surface thereof;

a packing mounted to the flanges and having inner rings around an inner circumferential surface thereof to closely engage with the ring grooves of the flanges;
and

a clamp having a packing seat to seat the packing therein, with a support
10 sidewall formed by a radial inward extension of each side of the clamp, the clamp being divided into a plurality of clamp parts so that the clamp parts are placed around the packing and are fastened together by a locking member.

2. The pipe joint device according to claim 1, wherein the packing comprises a main channel formed along a central line of an outer circumferential surface of the packing, and the clamp comprises a central rib formed on the packing
15 seat to correspond to the main channel.

3. The pipe joint device according to claim 2, wherein the packing further comprises one or more side channels symmetrically formed around the outer circumferential surface of the packing on opposite sides of the main channel, and
20 the clamp further comprises one or more side ribs formed on the packing seat to correspond to the side channels.

4. The pipe joint device according to claim 1, wherein the pipe joint is

selected from the group consisting of a valve, a reducer, a tee and an elbow.

5. The pipe joint device according to claim 1, wherein the flanges are mounted to the ends of the pipes or to the ends of the pipe and the pipe joint through a welding process.

5 6. The pipe joint device according to claim 1, wherein the flanges are stopped by the support sidewalls of the clamp so that the pipes or the pipe and the pipe joint are prevented from being removed from the clamp.

10 7. The pipe joint device according to claim 1, wherein each of the flanges is provided with a support groove around the outer circumferential surface thereof so that the support sidewalls of the clamp are seated in the ring-shaped support grooves of the flanges to prevent the pipes or the pipe and the pipe joint from being removed from the clamp.

8. The pipe joint device according to claim 1 or 2, wherein the packing has at least one circumferential hollow therein.

15 9. The pipe joint device according to claim 8, wherein the circumferential hollow comprises two or more circumferential hollows which are symmetrically formed in opposite sides of the packing.

10. The pipe joint device according to claim 1 or 2, further comprising:
an anti-friction member made of metal and covering a whole area or a part

of the outer circumferential surface of the packing to reduce friction between the clamp parts and a deformed part of the packing while the clamp parts are fastened together around the packing.

11. The pipe joint device according to claim 1, further comprising:

5 an adjusting member inserted into each of the support sidewalls of the clamp to compress the packing, placed between the support sidewalls of the clamp, in a direction of thickness of the packing.

12. The pipe joint device according to claim 1, further comprising:

10 a metal ring placed between each side surface of the packing and an associated support sidewall of the clamp to evenly transmit compression force to each side surface of the packing when the adjusting member is tightened to compress the packing.